Message

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Sent: 3/29/2016 9:08:02 PM
To: MacNicholl, Peter@DTSC (Peter.MacNicholl@dtsc.ca.gov) (Peter.MacNicholl@dtsc.ca.gov) [Peter.MacNicholl@dtsc.ca.gov]; Alex MacDonald [amacdonald@waterboards.ca.gov]; Keller, Lynn [Keller.Lynn@epa.gov]
Subject: Area 40 FS Alternatives Analysis
Attachments: Figures_4-1_to_4-4_alternatives.pdf; Table 4-1a b and c_Remedial Options.pdf

Hi Everyone – Per our meeting earlier this month, AR agreed to forward internal working copies of FS figures and tables identifying possible remedial alternatives for Area 40. These figures include the revised TCE groundwater contours per our discussion.

To simplify the analysis, we created subareas based upon potential remedies and receptors. The subareas are North Subarea and South Subarea. The North Subarea is further divided into the North Source Area, North Open Space Area. The North Source Area is the separation pond area and is defined by the existing fenceline around the area. The North Open Space Area is the remaining area north west of the planned Community Park. The South Area is everything else (essentially the Community Park).

Tables 4-1a, b, c include an analysis of the possible remedial actions for each receptor in each area.

- Table 4-1a just identifies the global institutional controls (Remedial Option Number 1) that would be necessary regardless of action (eg vapor mitigation for all structures regardless of subarea, soil management plan, construction restrictions, prevent use of groundwater, etc). This is defined on the remedial alternative figures (Figures 4-1 to 4-4) as the yellow line surrounding the subareas and the green line with sea foam green fill in Village 1.
- Table 4-1b identifies the remedial options available for each receptor in each North Subarea (Open Space and Source). The Remedial Option numbers are based upon receptor (Option Number 2 is for Ecological, Option Number 3 is for Human Health, and Option Number 4 is for Groundwater). For example, Remedial Option Number 2 is for ecological receptors in the North Source Area and North Open Space Area. The remedial options include 2a) no action, 2b) rip-rap rock cover, and 2c) low permeable cover with rock layer for the North Source Area and 2d) no action and 2e) rip-rap rock cover for the North Open Space Area. Next is Remedial Option 3 for Human Health, which includes 4 remedial options. Last is Remedial Option 4 for groundwater, which includes 7 remedial options.
- Table 4-1c identifies the remedial options available for each receptor in the South Subarea. The Remedial Option numbers are again based upon receptor (Option Number 5 is for Ecological, Option Number 6 is for Human Health, and Option Number 7 is for Groundwater). Since each remedial area is a discrete area, the remedial options are discussed for each discrete area. For example, excavation is not a single remedial option for groundwater, because some remedial areas may be suited for excavation, while others are suited for low permeable cover.

These tables provide an estimated cost, description of the remedial option, pros and cons for each option, the relative time to cleanup, and a listing of the other remedial areas that require action if this remedial option is chosen.

Figures 4-1 to 4-4 show four ways the remedial options can be grouped together into remedial alternatives for Area 40. Since the land use plan is pretty much set for this area, the remedial alternatives are based upon the future land use (if future land use does not occur, alternate remedial decisions can be made during 5-yr remedy reviews). Here is a summary of the remedial alternatives:

Alternative 1 – no action (no figure provided for this alternative)
Alternative 2 – In-Situ Chemical Reduction – includes the following remedial options
Area wide 1a – Institutional Controls
North Source Area

2a – Ecological - no action
3b – Human Health - fencing to prevent access
4f – Groundwater - Mass Removal (In-situ chemical reduction)

North Open Space Area
2d – Ecological – no action
3d – Human Health – no action
4a – Groundwater – monitoring and continued operation of GET AB treatment

South Area
5a – Ecological – no action
6b, 6c, 6d – Human Health – Mass Removal (excavation)
7a – Groundwater – monitoring and continued operation of GET AB treatment
7g – Groundwater – Mass Removal (excavation)

Alternative 3 – Engineered Low Permeability Cover – includes the following remedial options

Area wide 1a – Institutional Controls

North Source Area
2a – Ecological – low permeable cover with rock layer
3c – Human Health – low permeable cover
4e – Groundwater – Reduction in Mobility (low permeable cover)

North Open Space Area
2d – Ecological – no action
3d – Human Health – no action
4a – Groundwater – monitoring and continued operation of GET AB treatment

South Area
5a – Ecological – no action
6b, 6c, 6d – Human Health – Mass Removal (excavation)
7a – Groundwater – monitoring and continued operation of GET AB treatment
7g – Groundwater – Mass Removal (excavation)

Alternative 4 – Permeable Reactive Barrier – includes the following remedial options

Area wide 1a – Institutional Controls

North Source Area
2a – Ecological – no action
3c – Human Health – fencing to prevent access
4e – Groundwater – Mass Removal (Permeable Reactive Barrier)

North Open Space Area
2d – Ecological – no action
3d – Human Health – no action
4a – groundwater monitoring and continued operation of GET AB treatment

South Area
5a – Ecological – no action
6b, 6c, 6d – Human Health – Mass Removal (excavation)
7a – Groundwater – monitoring and continued operation of GET AB treatment
7g – Groundwater – Mass Removal (excavation)

Alternative 5 – Soil Excavation – includes the following remedial options

Area wide 1a – Institutional Controls

North Source Area
2a – Ecological – no action
3c – Human Health – fencing to prevent access
4e – Groundwater – Mass Removal (Excavation of Hot Spots around Separation Ponds)

North Open Space Area
2d – Ecological – no action

3d – Human Health – no action
4a – Groundwater – monitoring and continued operation of GET AB treatment

South Area

5a – Ecological – no action
6b, 6c, 6d – Human Health – Mass Removal (excavation)
7a – Groundwater – monitoring and continued operation of GET AB treatment
7g – Groundwater – Mass Removal (excavation)

As you can see, there are some very similar remedial options in each alternative, specifically, site-wide institutional controls, excavation for human health and groundwater in the south area, and no action in the North Open Space Area. The primary change in each of these alternatives is how the North Source Area is remediated.

I anticipate providing this limited amount of information will result in more questions than suggestions =). So, I would like to request that you review the information to get familiar with the format and how things are presented solely to prepare for the review of the draft document. Hold all comments until the draft document comes out...if you can =). Also, please note, these are internal working tables and figures. As such, they may change before the draft document is published. If they change, I will try to document the changes in a follow up email.

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